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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/067,208	04/28/1998	WILLIAM G. HOWARD	P-7860	9814

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EXAMINER

CREPEAU, JONATHAN

ART UNIT PAPER NUMBER

1745

31

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/067,208

Applicant(s)

HOWARD, WILLIAM G.

Examiner

Jonathan S. Crepeau

Art Unit

1745

mk-31

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1,3-8,10,12-17 and 95-97 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1,3-8,10,12-17 and 95-97 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1, 3-8, 10, 12-17, and 95-97, after entry of the amendments filed on October 17, 2002, and August 29, 2002. All the claims remain rejected under 35 USC §103 for substantially the reasons of record. This action is non-final.

Continued Examination Under 37 CFR 1.114

2. The request for a continued prosecution application (CPA) under 37 CFR 1.53(d) filed on October 17, 2002 is acknowledged. 37 CFR 1.53(d)(1) was amended to provide that the prior application of a CPA must be: (1) a utility or plant application that was filed under 35 U.S.C. 111(a) before May 29, 2000, (2) a design application, or (3) the national stage of an international application that was filed under 35 U.S.C. 363 before May 29, 2000. *See Changes to Application Examination and Provisional Application Practice*, interim rule, 65 *Fed. Reg.* 14865, 14872 (Mar. 20, 2000), 1233 *Off. Gaz. Pat. Office* 47, 52 (Apr. 11, 2000). Since a CPA of this application is not permitted under 37 CFR 1.53(d)(1), the improper request for a CPA is being treated as a request for continued examination of this application under 37 CFR 1.114. *See id.* at 14866, 1233 *Off. Gaz. Pat. Office* at 48.

Claim Rejections - 35 USC § 103

3. Claims 1, 3-8, 10, 12-17, and 95-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (U.S. Pat. 5,549,717) in view of Howard et al (U.S. Patent 5,439,760).

Regarding claims 1 and 10, in Figure 4 and in column 3, line 36-column 4, line 55, Takeuchi et al. teach an electrode assembly having two substantially straight sides and comprising spirally-wound anode and cathode assemblies. Regarding claims 1, 3, 10, and 12, the anode assembly comprises a nickel current collector (68) and lithium strips (64, 66). Regarding claims 1 and 10, a tab (72) extends from the edge of current collector 68. Current collector 68 has a smaller length and width than the length and width of lithium strip 66 (see col. 4, line 39). Regarding claims 1, 4, 6, 10, 13, and 15, the cathode assembly comprises silver vanadium oxide active material (47) which is embedded into a titanium current collector (54). Regarding claims 1 and 10, the current collector 54 comprises tabs (48, 50) extending from the edges. Regarding claims 5-8 and 14-17, Takeuchi et al. incorporate by reference the disclosure of Keister et al (U.S. Pat. 4,830,940), which discloses that the cathode can comprise a mixture of silver vanadium oxide, PTFE binder, and graphite powder conductivity enhancer (col. 8, lines 37-42 of Keister et al). Regarding claims 1 and 10, in column 4, line 26, Takeuchi et al. disclose that the separator surrounding the cathode assembly is sealed on all three open sides so that only the tabs project. In column 5, line 25, Takeuchi et al. disclose that alternatively, a separator may be folded around the anode assembly in a manner similar to the cathode assembly. Regarding claims 1, 10, and 97, in Figures 7, 8, and 10 and in column 5, line 63 et seq., the reference

discloses that the portion of the anode (80) around the periphery of the electrode assembly (i.e., the “end segment”) requires only one lithium strip.

Takeuchi et al. do not expressly teach that the anode current collector forms the outermost layer of the electrode assembly (claims 10 and 97), or that the cathode current collector is shorter than the lithium strip by an amount that enables the end segment of the anode assembly to be wound into the outermost layer (claim 10). Takeuchi et al. also do not expressly teach that the separators cover both the cathode and anode assemblies simultaneously, as recited in claims 1 and 10.

Howard et al. teach pocket-type separators covering spirally wound anode and cathode assemblies in column 3, lines 37-46. Additionally, Howard et al. teach in Figure 10 and in column 6, lines 53-65 that the length of the alkali metal strip (15) is longer than the length of the cathode current collector by an amount that enables the end segment of the anode assembly to be wound into the outermost layer.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the patent of Howard et al. to use separators simultaneously on the anode and cathode assemblies of Takeuchi et al. Although Takeuchi et al. in effect disclose that a separator is placed on either the anode *or* the cathode assembly, the artisan would understand that covering both electrode assemblies (as shown by Howard et al.) would be an advantageous modification of the battery of Takeuchi et al. because dendrite protection would be increased and delamination of both active material layers would be decreased. As stated in Howard et al. at column 3, line 40, “[t]he

separator pouch then prevents the transport of stray material in the cell which could cause a short circuit and the double thickness of the separator between anode and cathode elements better resists damage during the winding process.” The separators of Howard et al. are made by a folding and sealing method (col. 5, lines 33-68 of Howard et al.), as recited in claims 95 and 96.

Furthermore, the disclosure of Takeuchi et al. provides sufficient guidance for the artisan to ascertain that the anode current collector forms the outer layer (winding) of the electrode assembly. As stated above, the reference discloses that the portion of the anode around the periphery of the electrode assembly requires only one lithium strip. From this disclosure, the artisan would be able to ascertain that the one lithium strip would be present on the inside portion of the anode current collector, in order to make contact with a corresponding cathode active material layer. Accordingly, it would be well within the skill of the art to ascertain that the anode current collector would form the outer layer of the electrode assembly. Additionally, it is noted that the Howard et al. reference is also concerned with the having the anode current collector in the outermost layer of the cell. Therefore, the way that Howard et al. achieve this configuration (by making the cathode current collector shorter than the lithium strip, as recited in claim 10) is deemed to be an obvious way of achieving this same configuration in the battery of Takeuchi et al.

Response to Arguments

4. Applicant's arguments filed October 17, 2002 have been fully considered but they are not persuasive. Applicant maintains the position that the '760 patent (Howard et al.) supports the

claimed limitation that the anode current collector is shorter in length than the alkali metal strip.

Applicant cites Figure 1 of the '760 patent and asserts that the anode current collector 5 is shorter in length than the alkali metal layer 10. It is assumed that the Applicant means the alkali metal layer 15, since alkali metal layer 10 is clearly shorter than current collector 5. The Examiner acknowledges that Figures 1 and 3A of the '760 patent show that the edge of the strip 15 appears to extend beyond the edge of the current collector 5. However, it is unclear from these Figures what the configuration is on the *other end* of the anode assembly. In Figure 1, the top layer of alkali metal (10) obscures the view on the left-hand side of the end portions of the alkali metal layer 15 and the current collector 5. Absent a disclosure of this type, e.g. that the alkali metal layer 15 extends beyond the current collector 10 at this end or at least terminates flush with the current collector, it is not clear that the inventors of the '760 patent had possession of or specifically envisioned the feature that the collector 5 is shorter than the layer 15. Additionally, there appears to be no relevant disclosure in the text of the patent that refers to the relative lengths of the collector 5 and the layer 15 or the ending points of each. Accordingly, the Examiner maintains that the recitation of the anode collector being shorter than the alkali metal layer is not properly supported under 35 USC §112, first paragraph, by the '760 patent. Therefore, all of the pending claims of the instant application possess a filing date of April 28, 1998, and thus, the '760 patent and Takeuchi patent qualify as prior art under §102(b) against the claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 305-5408 or (703) 305-5433.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700

JSC

November 11, 2002